

REMARKS/ARGUMENTS

Favorable reconsideration of this application is requested in view of the amendments above and the remarks which follow.

Disposition of Claims

Claims 1, 4–17, 21, and 22 are pending in this application. Claims 2, 3, and 18–20 have been cancelled. Claims 21 and 22 are new. Claim 21 is directed to a fiber lens comprising a refractive lens having a near-hyperbolic shape. Claim 22 depends from claim 21. These claims are supported by the specification and claims as originally filed.

Restriction Requirement

Applicant confirms election of the claims in Group I, i.e., claims 1–17, for prosecution on the merits. The claims in Group II, i.e., claims 18–20, have been cancelled. However, Applicant retains the right to present the canceled claims in a divisional application.

Rejections under 35 U.S.C. §102

I. Claims 1–4 and 6–17 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,638,471 (Semo et al.). Claims 2 and 3 have been cancelled. Accordingly, rejection of these claims is moot. Reconsideration of rejection of claims 1, 4, and 6–17 is respectfully requested.

Claim 1 recites a fiber lens comprising a graded-index lens, a single-mode fiber disposed at a first end of the graded-index lens, and a refractive lens having a hyperbolic shape formed at a second end of the graded-index lens to focus a beam from the single-mode fiber to a diffraction-limited spot.

Semo et al. do not disclose “a refractive lens having a hyperbolic shape formed at a second end of the graded-index lens,” as recited in claim 1. Instead, Semo et al. disclose a hyperbolic lens (20) affixed to an end of a polarization-maintaining fiber (10).

Claim 4 recites a fiber lens comprising a graded-index lens, a single-mode fiber disposed at a first end of the graded-index lens, a refractive lens having a hyperbolic or near-hyperbolic shape disposed at a second end of the graded-index lens to focus a collimated or non-collimated beam, respectively, from the single-mode fiber to a diffraction-limited spot, and a coreless spacer rod interposed between the refractive lens and the graded-index lens.

Semo et al. do not disclose “a coreless spacer rod interposed between the refractive lens and the graded-index lens.” In column 5, lines 47–55, of the Semo et al. patent, Semo et al. teach interposing a step index multimode fiber between a microlens and a multimode optical fiber. This does not satisfy the limitation “a coreless spacer rod interposed between the refractive lens and the graded-index lens,” as recited in claim 4.

In view of the above, claims 1 and 4 are not anticipated by Semo et al. Claims 6–14, being dependent from claim 1, are also not anticipated by Semo

et al. Withdrawal of the rejection of claims 1, 4 and 6-14 over Semo et al. is respectfully requested.

With respect to claim 15, Semo et al. do not disclose a fiber lens having all the limitations recited in claim 15. Withdrawal of the rejection of claim 15 and claims 16 and 17 which depend from claim 15 is respectfully requested. If the Examiner wishes to maintain the rejection of claims 15-17, he is requested to point to specific portions of the Semo et al. patent that anticipate claims 15-17.

II. Claims 1, 2, and 6-16 were rejected under 35 U.S.C. §102(b) as being anticipated by EP 0155379A (Siemens). Claim 2 has been cancelled. Accordingly, rejection of this claim is moot. Reconsideration of the rejection of claims 1 and 6-16 is respectfully requested.

The following is an English Abstract from equivalent EP 0155379A3 of the Siemens patent:

"Arrangement for coupling a monomode fibre (1) to a semiconductor laser (4). The coupling arrangement consists of a graded-index optical waveguide (2) of defined length (L) spliced to the monomode fibre (1), and of a spherical or aspherical refracting fibre lens (3), which is fused onto the end of the graded-index optical waveguide (2). The coupling arrangement has the advantage that it has a large aperture angle, a low feedback of the first lens surface and only a few reflecting surfaces, and that it requires few adjusting steps."

From the above, Siemens does not disclose or teach that the fiber lens (3) has a hyperbolic shape, as recited in claim 1. Therefore, Siemens cannot anticipate claim 1. Siemens also does not disclose a fiber lens having all the limitations recited in claim 15. Withdrawal of the rejection of claims 1 and 15 is respectfully requested. Claims 6-14 and 16, being dependent on one of claims 1 and 15, are also patentable in view of the foregoing arguments.

Allowable Subject Matter

The Examiner has indicated that claim 5 would be allowable if rewritten in independent form including the limitations of the base claim and any intervening claims. Claim 5 has been rewritten in independent form. Accordingly, claim 5 is now in allowable form.

Conclusion

The rejected claims have been amended and/or shown to be allowable over the prior art. Applicant believes that this paper is fully responsive to all the grounds of rejection cited by the Examiner in the Office Action dated June 15, 2005, and respectfully requests that a timely Notice of Allowance be issued in this case.

Please apply any charges not covered or credits in connection with this filing to Deposit Account No. 03-3325 (ref. SP02-275).

Respectfully submitted,

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